CITY OF Tigard KNOW H2O

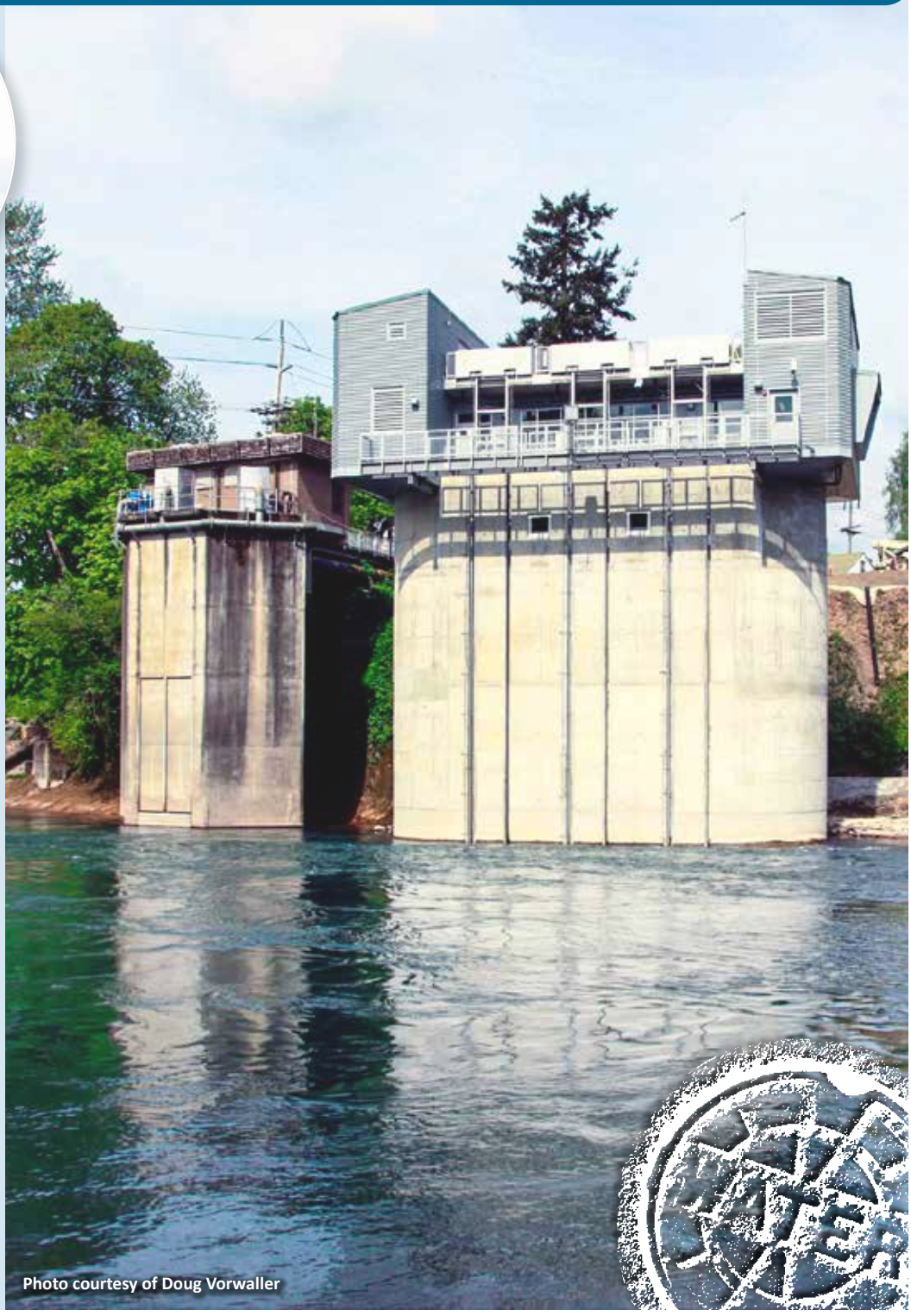
SUMMER 2015 EDITION

The City of Tigard provides clean, safe, dependable drinking water to the residents of Durham, King City, two-thirds of Tigard, and the Tigard Water District.

2014 Annual Water Quality Report

Inside:

COVER PHOTO: *The new fish-friendly river intake pump station (pictured on the right)—part of the Lake Oswego-Tigard Water Partnership—will be capable of delivering up to 38 million gallons of water per day from the Clackamas River to a treatment plant in West Linn. The project is expected to be online in 2016, and will ensure Tigard water customers an ownership share in a safe and economical supply of high-quality drinking water for decades to come. The existing intake pump (pictured left) will be removed.*



WATER SYSTEM INFORMATION

The Purpose of this Report

The City of Tigard is responsible for providing a clean, safe, dependable supply of drinking water to the 60,000 residents of the Tigard Water Service Area (TWSA). The service area includes the cities of Durham, King City, two-thirds of Tigard and the Tigard Water District. Each entity has representation on the Intergovernmental Water Board (IWB). The board advises the Tigard City Council on water-related matters.

This report summarizes **Tigard's 2014 water quality data.** Additional information provided is to inform, educate and update consumers on water issues affecting the community.

Have a question about this report?

- Contact Environmental Program Coordinator Jennifer Joe at 503-718-2599 or jennifer@tigard-or.gov.
- Habla Espanol? Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Where Does Tigard's Water Come From?

SOURCE INFORMATION

The City of Tigard currently purchases nearly 90 percent of its water from wholesale water providers like the **Portland Water Bureau** (PWB). The PWB manages the Bull Run Watershed, a surface water supply located in the Mt. Hood National Forest. The watershed encompasses 102 square miles and typically receives 80–170 inches of rainfall per year. PWB switches to its groundwater source (the Columbia South Shore Well Field) in cases of emergency, high demand or compromised water quality. All water obtained from the PWB is unfiltered.

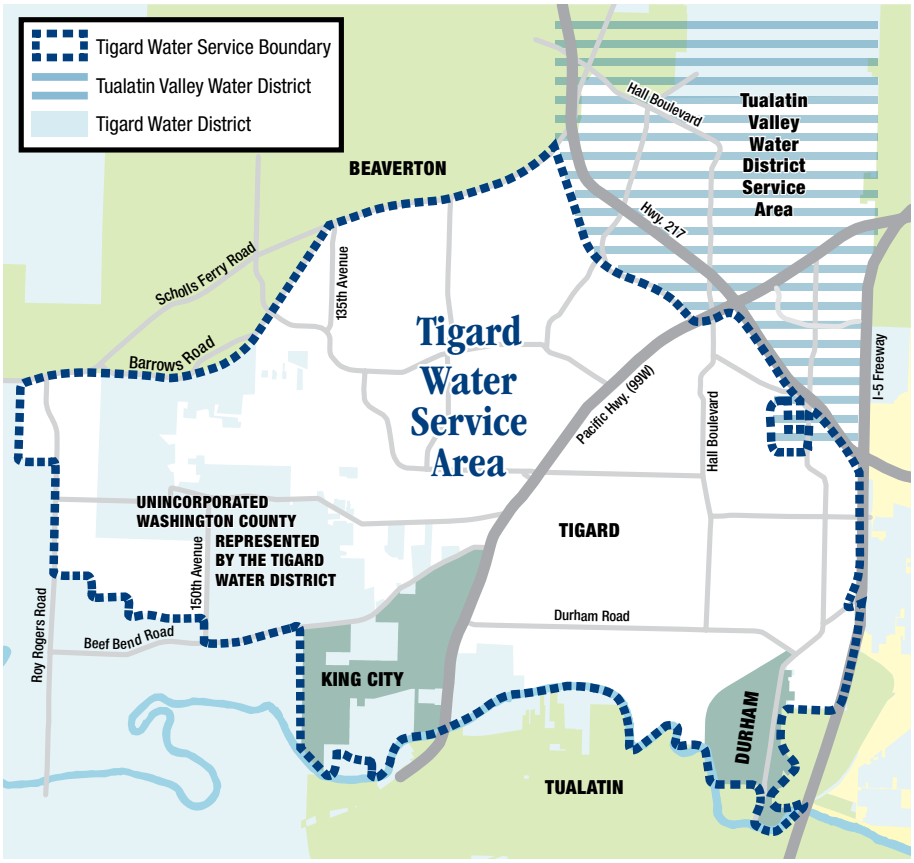
Tigard also purchases water from the **City of Lake Oswego**. Lake Oswego draws its water from the Clackamas River Basin. Encompassing nearly 940 square miles, the basin begins in the Mt. Hood National Forest. Drawn from the Clackamas River, the pumped water moves through a pipeline buried beneath the Willamette River to the Lake Oswego Treatment Plant located in West Linn.

During periods of high water demand, Tigard can supplement its supply with water from city-owned aquifer storage and recovery wells, and a native groundwater well.

Future Water Supply

The Lake Oswego Tigard Water Partnership will provide reliable, high-quality drinking water to your home or business in 2016. For more information visit: **www.lotigardwater.org.**

TIGARD WATER SERVICE AREA



2014 Water Quality Analysis Results

Federal standards regulate contaminants in order to protect drinking water quality.
Tigard's wholesale water providers test for more than 200 regulated and unregulated contaminants.

Contaminant	MCL	MCLG	TWSA Results LOW ← Range → HIGH		Violation? YES / NO	Typical Source
MICROBIOLOGICALS						
Fecal Coliform and E. coli Bacteria	A routine sample and a repeat sample are total coliform positive, and 1 is also E. coli positive	0% of samples with detectable E. coli bacteria	**Not detected**		NO	Human and animal fecal waste
Giardia	TT required: Disinfection to inactive 99.9% of cysts	NA	**ND**	**One Giardia cyst in a 50 liter sample**	NO	Animal waste
Total Coliform Bacteria	Must not detect coliform bacteria in more than 5% of samples per month	0% of samples with detectable coliform bacteria	**ND**	**Four of 91 samples in October had detectable coliform (<5%)**	NO	Naturally present in the environment
Turbidity (NTU)	Cannot exceed 5 NTU more than 2 times in 12 months	NA	**0.19**	**4.04**	NO	Erosion of natural deposits
INORGANICS						
Arsenic (ppb)	10	0	**ND**	**1.46**	NO	Found in natural deposits
Barium (ppm)	2	2	**0.00072**	**0.0107**	NO	
Chromium–Total (ppb)	100	100	**ND**	**0.2**	NO	
Copper (ppm)	NA	1.3	**ND**	**0.00202**	NO	
Fluoride (ppm)	4	4	**ND**	**0.16**	NO	
Nitrate (ppm)	10	10	**0.70**	**1.10**	NO	Erosion of natural deposits, runoff from fertilizer, leaching from septic tanks and sewage
Nitrite (ppm)	1	1	**ND**	**0.11**	NO	
Lead (ppb)	NA	0	**ND**	**0.15**	NO	Found in natural deposits
DISINFECTION RESIDUAL						
Total Chlorine Residual Running Annual Average (ppm)	4	4	**0.90**	**1.50**	NO	Additive used to disinfect water
Total Chlorine Residual at Any One Site (ppm)	NA	NA	**ND**	**2.20**	NO	

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Contaminant	MCL	MCLG	TWSA Results LOW ← Range → HIGH		Violation? YES / NO	Typical Source
DISINFECTION BYPRODUCTS—HALOACETIC ACIDS						
Haloacetic Acids Running Annual Average (ppb)	60	NA	**27.0**	**34.0**	NO	Byproduct of drinking water disinfection
Haloacetic Acids at Any One Site (ppb)	NA	NA	**17.0**	**57.0**	NO	
DISINFECTION BYPRODUCTS—TOTAL TRIHALOMETHANES						
Total Trihalomethanes Running Annual Average (ppb)	80	NA	**27.0**	**36.0**	NO	Byproduct of drinking water disinfection
Total Trihalomethanes at Any One Site (ppb)	NA	NA	**24.0**	**54.0**	NO	
UNREGULATED AND SECONDARY (Regulations provide advisory limits only)						
Radon (pCi/l)	No Standard	No Standard	**100.0**	**310.00**	NO	Found in natural aquifer deposits
Sodium (ppm)	20	20	**6.0**	**8.0**	NO	Erosion of natural deposits, water treatment additive
Sulfate (ppm)	250	250	**1.0**	**2.9**	NO	Naturally occurring substance in drinking water
UNREGULATED CONTAMINATE MONITORING RULE 3						
Chromium (ppb)	NA	NA	**0.23**	**0.33**	NO	Naturally occurring element
Hexavalent Chromium-Dissolved (ppb)	NA	NA	**ND**	**0.067**	NO	
Strontium (ppb)	NA	NA	**17.0**	**72.0**	NO	
Vanadium (ppb)	NA	NA	**0.04**	**19.0**	NO	Naturally occuring element metal

Contaminant	90th Percentile	Number of Sites Exceeding the Action Level	MCLG	Lead and Copper Rule Exceedance	Action Level Reached	Typical Source
Copper (ppm)	**0.34**	0 of 114 samples (0%) exceeded the copper action level of 1.3 ppm	1.3	More than 10% of the homes tested have levels above 1.3 ppm	No	Corrosion of household and commercial plumbing
Lead (ppb)	**14.0**	11 of 114 samples (9.6%) exceeded the lead action level of 15 ppb	0.0	More than 10% of the homes tested have levels above 15 ppb	No	

AL: action level, **MCL:** maximum contaminant level, **MCLG:** maximum contaminant level goal, **MRDL:** maximum residual disinfectant level, **MRDLG:** maximum residual disinfectant level goal, **MDL:** method detection limit, **ND:** non-detected, **NA:** not applicable, **NTUs:** nephelometric turbidity units, **ppm:** parts per million, **mg/L:** milligrams per liter, **ppb:** parts per billion, **µg/L:** mircograms per liter, **pCi/l:** picocurries per liter, **TT:** treatment technique. For complete definitions, see page 6.

Information on Detected Contaminants

In 2014, Tigard's wholesale water providers monitored over 200 regulated and unregulated contaminants, which include pesticides and radioactive contaminants. In addition to these efforts, Tigard staff concurrently tested the water quality throughout the TWSA distribution system. **If a known health-related contaminant is not listed in this report, it was not detected in the drinking water.**

Federal standards regulate contaminants to protect drinking water quality. These standards limit the levels of contaminants known to occur in water that can adversely affect public health.

REGULATED CONTAMINANTS

Fluoride is a naturally occurring element that can dissolve into the groundwater supply. At the levels found in the drinking water, it is unlikely to contribute to adverse health effects.

Chlorine is added to maintain disinfection requirements throughout the water distribution system.

Disinfection Byproducts (Haloacetic Acids and **Total Trihalomethanes)** form through chemical reactions between chlorine and naturally occurring organic matter in the water. The careful control of the disinfection process keeps byproduct levels to a minimum, while maintaining the required levels of chlorine.

Nitrates and **Nitrites** form through the erosion of natural deposits, agricultural activity and leaching of septic tanks.

Total Coliform Bacteria are naturally present in the environment and may indicate other potentially harmful bacteria may be present. Chlorine added to the drinking water supply kills these bacteria.

Turbidity is a measure of the amount of sediment suspended in the water. This sediment can interfere with disinfection and provide a medium for microbial growth. Large storm events can result in increased turbidity.

UNREGULATED CONTAMINANTS

Water quality standards for unregulated contaminants establish guidelines to assist public water systems in managing drinking water for aesthetic considerations such as taste, color and odor. These contaminants do not present a risk to human health.

Radon is a naturally occurring, radioactive gas that cannot be seen, tasted or smelled. Radon has been detected at varying levels in water from Tigard's aquifer storage and recovery wells and native groundwater well. For more information about radon, call the EPA's Radon Hotline: **800-SOS-RADON** or visit **www.epa.gov/radon/rnwater.html**.

Sodium is formed through the erosion of natural deposits and may be added to water during treatment.

Sulfate is formed through the erosion of natural deposits and at high levels can contribute to a salty taste and/or odor in water.

UNREGULATED CONTAMINATE MONITORING RULE 3 (UCMR3)

The purpose of the Environmental Protection Agency's (EPA) Unregulated Contaminant Monitoring Rule (UCMR) is to collect nationwide data to help the EPA evaluate the occurrence of, and form regulatory decisions about, certain unregulated contaminants in drinking water. While there are no established federal guidelines for these substances, states may choose to establish their own guidelines. For example, the state of California has adopted a state-specific drinking water standard of 10 ppb for hexavalent chromium, which took effect in 2014.

To learn about the health effects of contaminants, visit: ***http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Monitoring/HealthEffects/Pages/index.aspx***

Cryptosporidium

Cryptosporidium is a microorganism (protozoan) naturally present in surface water supplies throughout the world. Surface water supplies are particularly vulnerable if they receive runoff or pollution from human or animal wastes.

Since wildlife inhabits the Bull Run and Clackamas River Watersheds, the managing agencies regularly monitor for Cryptosporidium. Occasionally this monitoring detects low levels of Cryptosporidium.

New national standards further reduce the risks of illness from Cryptosporidium. Symptoms of infection include nausea, abdominal cramps and diarrhea.

Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life threatening illnesses. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to avoid infection.

Cryptosporidium must be ingested for it to cause disease and may be spread through means other than drinking water.

Lead in the Drinking Water… *Are You at Risk?*

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Tigard is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to request a free lead-in-water test from the LeadLine. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the LeadLine, **503-988-4000**, **www.leadline.org** or the Safe Drinking Water Hotline **800-426-4791**, **www.epa.gov/safewater/lead**.

Definitions

Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk of health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Method Detection Limit (MDL): The lowest concentration of a substance that can be accurately measured using applicable testing methods.

Non-detected (ND): Not detected at or above the MDL.

Not Applicable (NA): Not applicable for the specified contaminant.

Nephelometric Turbidity Units (NTUs): Turbidity is a measure of how clear the water looks. Turbidity can interfere with disinfection and provide a medium for microbial growth.

Parts per Million (ppm) or **Milligrams per Liter (mg/L):** A unit measurement describing the level of detected contaminants that is one part by weight of analyte to one million parts by weight of the water sample. One part per million corresponds to one penny in $10,000 or approximately one minute in two years. One part per million is equal to 1,000 parts per billion.

Parts per Billion (ppb) or **Mircograms per Liter (µg/L):** A unit measurement describing the level of detected contaminants that is one part by weight of analyte to one billion parts by weight of the water sample. One part per billion corresponds to one penny in $10,000,000 or approximately one minute in 2,000 years.

Picocurries per Liter (pCi/L): A standard measurement of radioactivity in water.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

TWSA SOURCE WATER ASSESSMENT

In 2005, the Oregon Health Authority and the Department of Environmental Quality conducted a source water assessment for the aquifer storage and recovery wells and the native groundwater well serving the TWSA. The purpose of the assessment was to identify potential sources of direct and indirect contamination in areas surrounding these wells. The assessment identified 50 potential contaminant sources (natural and man-made) that may affect the water quality if managed improperly.

To view a summary of the assessment, contact Environmental Program Coordinator Jennifer Joe at ***503-718-2599*** *or* ***jennifer@tigard-or.gov****.*

What the EPA Says About Drinking Water Contaminates

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants expected in untreated water include microbial contaminants such as viruses and bacteria, inorganic contaminants such as salts and metals, pesticides and herbicides, organic chemicals from industrial or petroleum use, and radioactive contaminants.

Because of water's natural cycle, drinking water, including bottled water, may contain small amounts of some contaminants. However, the presence of contaminants does not necessarily indicate that the water poses a health risk. To ensure tap water is safe to drink, the EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The EPA establishes test methods and monitoring requirements for contaminants and requires public water systems to give public notice in the event of a violation.

Contaminants in drinking water sources may include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from wildlife or septic systems.
- **Inorganic contaminants**, such as salts and metals, which can occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as farming, urban stormwater runoff and home or business use.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and may come from gas stations, urban stormwater runoff and septic systems.
- **Radioactive contaminants**, which can occur naturally.

More information about contaminants and potential health effects is available from the EPA's Safe Drinking Water Hotline at ***800-426-4791****.*

SPECIAL NOTICE FOR IMMUNO-COMPROMISED PERSONS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health-care providers. Environmental Protection Agency and Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline **800-426-4791**.

Q&A *about* H_2O

FREQUENTLY ASKED QUESTIONS

Is our water soft or hard?

Our water is very soft. Most of the year the hardness ranges from 3–8 parts per million (ppm), or approximately ¼ to ½ a grain of hardness per gallon. During the summer, some customers receive a blend of groundwater from our aquifer storage and recovery wells. This water has a hardness of approximately 80 ppm (about 5 grains per gallon), which is deemed moderately hard.

What is the pH of the water?

The pH of Tigard's water typically ranges between 7.4 – 8.1.

What can I do about chlorine taste and odor in my water?

The simplest way to get rid of chlorine taste and odor is to place tap water in a container and allow it to sit for a few hours. The taste and odor will dissipate.

How can I get my water tested?

Contact the LeadLine at **www.leadline.org** or **503-988-4000** for information about free lead-in-water testing. For more extensive testing, private laboratories can test your tap water for a fee. Not all labs are accredited to test for all contaminants. For information about accredited labs, call the Oregon Health Authority, Oregon Environmental Laboratory Accreditation Program at **503-693-4122**.

I'm a homebrewer and am interested in parameters such as alkalinity, calcium, chloride and magnesium in the water. Where can I get this information?

Unfortunately, these parameters are not primary contaminants and the City of Tigard does not test for them.

Questions?

TIGARD HAS THE ANSWERS!

Your Water Bill?
Utility Billing **503-718-2460**

Water Quality?
Jennifer Joe **503-718-2599**
jennifer@tigard-or.gov

Water Conservation?
Jennifer Joe **503-718-2599**
jennifer@tigard-or.gov

Backflow Prevention?
Hung Nguyen **503-718-2603**
hung@tigard-or.gov

Water Emergencies?
Public Works **503-718-2591**

After-hours Water Emergencies?
On-call Service **503-639-1554**

General Inquiries?
Public Works **503-718-2591**

Are you interested in learning more about your water?

The Intergovernmental Water Board invites you to attend its monthly meetings, held the second Wednesday of each month at 5:30 p.m. in the Tigard Public Works Building Auditorium located at 8777 SW Burnham St., Tigard, Oregon.

City *of* Tigard
PUBLIC WORKS DEPARTMENT
13125 SW Hall Blvd.
Tigard, OR 97223

Community Benefits

Lake Oswego · Tigard Water Partnership
sharing water • connecting communities

Construction activities at Lake Oswego-Tigard Water Treatment Plant located in West Linn.

The City of Tigard currently purchases the majority of its water from the Portland Water Bureau (PWB). As a wholesale water customer, Tigard has no say in water quality decisions, little control over the price it pays for water, nor does it have any guarantee that adequate supplies will be available in the future. Tigard's water contract with the PWB expires in 2016.

Over the last 15 years, Tigard explored many long-term water supply options. In 2008, the city made the decision to partner with Lake Oswego to build a new water system; a system that will meet both communities' future water needs for decades to come.

Under the Lake Oswego Tigard Water Partnership, Tigard will share in the ownership and control of the water system. Though costly, the partnership remains the least expensive option to meet future needs and provide water customers with a reliable, high-quality water supply.

Construction of several partnership projects is underway. The Tigard City Council is actively involved in monitoring these projects with our Lake Oswego partners.

*For more information about the partnership, visit **www.lotigardwater.org**.*